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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,855

06/14/2006

Daisuke Kawasaki

8017-1193

6622

466

7590

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

09/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,855	Applicant(s) KAWASAKI ET AL.	
	Examiner JULIAN MERCADO	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>May 13, 2009, March 21, 2007 and June 14, 2006.</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Remarks

Claims 1-20 are pending.

Information Disclosure Statement

The Information Disclosure Statements (IDS) filed on May 13, 2009, March 21, 2007 and June 14, 2006 have been considered by the examiner except where lined-through, as these documents cannot be located in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 12, 15-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (2002/0037458) in view of Armand (U.S. Pat. 4,818,644)

For claims 1, 7, 9, 15-18, Yamaguchi et al. teaches a secondary battery having a positive electrode of lithium-manganese composite oxide and lithium nickel composite oxide, exemplified by a weight ratio of 80:20, with LiPF₆. See par. [0224]. The electrolyte solution comprises a vinylidene carbonate, *inter alia*. See par. [0017]

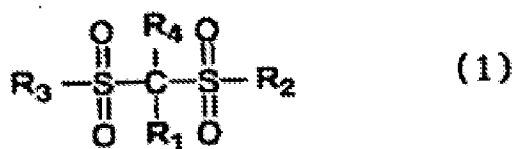
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For claims 2-4, 8 and 20, the composition of the cathode active material is $\text{LiMn}_{1.8}\text{Cr}_{0.2}\text{O}_4$ and $\text{LiNi}_{0.8}\text{Co}_{0.2}\text{O}_2$. As to a hydrogen ion scavenger function, it is noted that page 19 of the specification discloses that "[b]y further mixing a lithium-nickel composite oxide as a hydrogen ion scavenger in the positive electrode, in addition to those materials, elution of manganese can more effectively be inhibited." Claim 4 is noted to recite that "the hydrogen ion scavenger is a lithium-nickel composite oxide having a hydrogen ion scavenging function, and is mixed with the positive electrode." As Yamaguchi et al. similarly disclose mixing of lithium-nickel composite oxide in its positive electrode, it is asserted that the property of a hydrogen ion scavenger is present, inherently, absent of a showing by applicant that the claimed invention distinguishes over the reference. *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) and *In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990).

Yamaguchi et al. does not explicitly teach the claimed electrolyte of the general formula (1). However, Armand teaches a secondary battery, i.e. "secondary electrochemical batteries", in which the electrolyte solution comprising an aprotic solvent having at least an electrolyte dissolved therein, and the electrolyte solution comprises a compound represented by the disclosed formula (1) as shown by the following structure:



which is the same chain disulfonate as recited in the claimed general formula (1):



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The skilled artisan would find obvious to modify Yamaguchi et al. by employing the chain disulfonate of Armand. The motivation for such a modification is in view of the chain disulfonate's high degree of solubility and high ionic conductivity. (Armand in col. 1 line 67 and col. 3 line 6)

For claims 5, 6 and 12, the prior does not explicitly teach the surface area and diameter of the composite oxide and amount of the chain disulfonate. However, it is asserted that optimization of the surface area and diameter of the composite oxide and amount of chain disulfonate is in the realm of routine experimentation and within the purview of the skilled artisan, absent of a showing of evidence or unexpected results indicating that these parameters are critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (2002/0037458) in view of Armand (U.S. Pat. 4,818,644) and further in view of Fleischer et al. (U.S. Pat. 6,225,009).

The teachings of Yamaguchi et al. and Armand are discussed above.

As to a bismuth compound, Fleischer et al. disclose the inclusion of bismuth oxide, *inter alia*, in the cathode. See col. 14 line 20 et seq. The skilled artisan would find obvious to further modify Yamaguchi et al. by employing a bismuth compound. The motivation for such a modification is to catalyze the cathodic reactions in the electrochemical cell. (Ib.)

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Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (2002/0037458) in view of Armand (U.S. Pat. 4,818,644) and further in view of Utsugi et al. (2004/0043300).

For purposes of discussion, the corresponding U.S. Pat. 7,163,768 is cited herein.

The teachings of Yamaguchi et al. and Armand are discussed above.

As to the electrolyte further comprising the claimed cyclic monosulfonates of the general formula (2) and general formula (3), Utsugi et al. disclose general formula (9) and general formula (1), respectively. See col. 7 line 45 and col. 12 line 60. The skilled artisan would find obvious to further modify Yamaguchi et al.'s invention by employing the claimed cyclic monosulfonates. The motivation for such a modification is to form a passivation coating at the electrode interface to decomposition of solvent molecules and prevent the elution of manganese from the cathode. See col. 5 line 8 et seq.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (2002/0037458) in view of Armand (U.S. Pat. 4,818,644) and further in view of Shiota (U.S. Pat. 5,795,674).

The teachings of Yamaguchi et al. are discussed above.

As to the secondary battery being covered with a laminated exterior package, Shiota disclose that cylindrical manganese-lithium battery are generally provided with a battery cover (in conjunction with a safety valve) formed by laminating metal foil and plastic. See col. 1 line 29 et seq. The skilled artisan would find obvious to modify Yamaguchi et al. by employing a

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laminated exterior. The motivation for such a modification is to prevent bursting of the battery.

(Ib.)

Double Patenting

Claims 1-9, 12, 15-18 and 20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of copending Application No. 10/541,063 (the '063 application) in view of Yamaguchi et al.

Claims 10 and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of the '063 application in view of Yamaguchi et al. and Fleischer et al.

Claims 13 and 14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of the '063 application in view of Yamaguchi et al. and Utsugi et al.

Claim 19 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of the '063 application in view of Yamaguchi et al. and Shiota.

This is a provisional obviousness-type double patenting rejection. Any differences between the '063 application and the instant application is deemed non-obvious in view of the teachings of Yamaguchi et al., Fleischer et al., Utsugui et al. and Shiota et al. as applied in this Office action. It is noted that both the '063 application and the instant application both recite the same chain disulfonate as recited in the claimed general formula (1).

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The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

/Julian Mercado/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795